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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/658,874	09/10/2003	Samir Kumar	D/A2425	3222

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EXAMINER

ZACHARIA, RAMSEY E

ART UNIT	PAPER NUMBER
	1773

DATE MAILED: 08/09/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)
	10/658,874	KUMAR ET AL.
	Examiner Ramsey Zacharia	Art Unit 1773

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM  
THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on \_\_\_\_.
- 2a) This action is **FINAL**.      2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) 22 is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_ is/are allowed.
- 6) Claim(s) 1-21 and 23-29 is/are rejected.
- 7) Claim(s) \_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) All    b) Some \* c) None of:
  1. Certified copies of the priority documents have been received.
  2. Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 8/6/2003.
- 4) Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) Notice of Informal Patent Application (PTO-152)
- 6) Other: \_\_\_\_.

**DETAILED ACTION**

***Election/Restrictions***

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
  - I. Claims 1-21 and 23-29, drawn to a carrier, classified in class 428, subclass 411.1.
  - II. Claim 22, drawn to a process, classified in class 427, subclass 212.

The inventions are distinct, each from the other because of the following reasons:

2. Inventions I and II are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case the product as claimed can be made by a materially different process such as one in which the carrier is not in the form of particles or a process comprising coating the carrier with polyaniline doped carbon black particles.
3. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.
4. During a telephone conversation with Eugene O. Palazzo on 03 August 2004 a provisional election was made with traverse to prosecute the invention of Group I, claims 1-21 and 23-29. Affirmation of this election must be made by applicant in replying to this Office action. Claim 22 is withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

5. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

*Specification*

6. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

*Claim Rejections - 35 USC § 112*

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claims 9 and 16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

9. Claim 9 is rendered indefinite because it is unclear whether the weight percent recited is based on the weight of the coating or the total weight of the carrier.

10. The term "tetrafluoroethylene" in claim 16 renders the claim indefinite because tetrafluoroethylene is a monomer, not a polymer. This rejection may be overcome by replacing the term "tetrafluoroethylene" with --polytetrafluoroethylene--.

***Claim Rejections - 35 USC § 102***

11. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

12. Claims 1-6, 9-21, 23, 24, 26-29 are rejected under 35 U.S.C. 102(b) as being anticipated by Drappel et al. (U.S. Patent 6,391,509).

Drappel et al. teach a carrier comprising a core and a polymer coating which comprises a mixture of a coating polymer and a conductive polymer (column 5, lines 47-49). The coating polymer may be formed of a mixture of polymers, including polymers that are not in close proximity in the triboelectric series and mixtures of about 2 to 7 polymer (column 5, lines 49-55). The conductive polymer may comprise as little as about 5 wt% of the total weight of the coating (column 5, line 66-column 6, line 5). The core has a diameter of about 30 to 100  $\mu\text{m}$  (column 6, lines 6-7). The core is made of iron, steel, or a ferrite (column 6, lines 7-8). The coating polymer may be, for example, a styrene polymer, polymethyl methacrylate, or a mixture of polymethyl methacrylate and polytrifluoroethyl methacrylate (column 6, lines 8-19). The polymer coating is present in an amount of from about 0.5-10 wt% or about 1-5 wt% of the carrier (column 6, lines 19-22). The carrier may have a conductivity of about  $10^{-15}$  to  $10^{-4}$  (ohm-cm)<sup>-1</sup> and a triboelectric charge value of about -60 to 60 microcoulombs/gram (column 6, lines 22-26). The carrier may be combined with a toner to produce a developer (column 7, lines 12-13). The toner may comprise a thermoplastic resin, colorant, and other optional components

(column 7, lines 15-18). The conductive polymer may be any of a number of commercially available conductive polymers (column 8, lines 62-64). Suitable commercially available conductive polymers include Eeonomer (the same material used in the instant invention, see pages 13 and 14), which comprises polypyrrole and polyaniline applied as thin layers on the surface of carbon black (column 9, lines 56-60).

Regarding claim 9, Drappel et al. do not teach the amount of carbon black present. However, Drappel et al. do teach using the same conductive material as is used in the instant invention (Eeonomer) and the carrier of Drappel et al. has the same conductivity and triboelectric charge values as that of the instant invention. Conductivity and triboelectric charge values are material properties that are functions of the type and amount conductive materials. Since the same conductivities and triboelectric charge values are obtained using the same material (Eeonomer), the amount of carbon black in the carrier of Drappel et al. should be the same as that recited in instant claim 9.

***Claim Rejections - 35 USC § 103***

13. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

14. Claims 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Drappel et al. (U.S. Patent 6,391,509).

Drappel et al. teach all the limitations of claims 7 and 8 as outlined above, except for teaching that the polypyrrole has molecular weights as recited in claims 7 and 8.

However, Drappel et al. do teach that the polyaniline as the conductive polymer may have a weight average molecular weight of about 10,000-400,000, about 20,000-100,000, or about 22,000-75,000 with an  $M_w/M_n$  ratio of about 1.4 to 2 (column 5, lines 56-62). Drappel et al. further disclose that polyaniline and polypyrrole are functionally equivalent materials for the purpose of their invention (column 7, lines 24-28).

One skilled in the art would be motivated to use a polypyrrole having a weight average molecular weight of about 22,000-75,000 with an  $M_w/M_n$  ratio of about 1.4 to 2 in place of the polyaniline having a weight average molecular weight of about 22,000-75,000 with an  $M_w/M_n$  ratio of about 1.4 to 2 taught by Drappel et al. since Drappel et al. teach the equivalence of polyaniline and polypyrrole.

15. Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Drappel et al. (U.S. Patent 6,391,509) in view of Viswanathan et al. (U.S. Patent 6,764,617).

Drappel et al. teach all the limitations of claim 25, as outlined above, except for the use of a polyaniline attached to lignin. However, Drappel et al. do teach that the polyaniline may be doped with an organic acid, preferably a sulfonic acid (column 8, lines 65-67).

Viswanathan et al. is directed to a composition comprising polyaniline doped with a lignosulfonic acid compound (column 1, lines 61-64). Lignosulfonic acid compounds are abundant and inexpensive (column 5, lines 15-16).

One skilled in the art would be motivated to use a lignosulfonic acid as the sulfonic acid of dopant Drappel et al. because it is inexpensive and known to be suitable for doping polyaniline.

***Conclusion***

16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ramsey Zacharia whose telephone number is (571) 272-1518. The examiner can normally be reached on Monday through Friday from 9 to 5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Thibodeau, can be reached on (571) 272-1516. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



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